

REMARKS

Claims 2-19 are pending in the application. Claims 15, 4, 8, 10, and 11 were rejected under 35 U.S.C. §103(a) as being unpatentable over Robinson *et al.* (U.S. Pat. 6,091,463 A). Claims 6, 12-14, and 18 were rejected under 35 U.S.C. 103(a) as being unpatentable over Robinson *et al.*, as applied to Claim 15, in view of Birnbach *et al.* (U.S. Pat. 4,786,128). Claim 7 was rejected under 35 U.S.C. 103(a) as being unpatentable over Robinson *et al.*, as applied to Claim 15, in view of Bowman *et al.* (U.S. Pat. 5,637,883). Claims 2, 5, and 9 were rejected under 35 U.S.C. 103(a) as being unpatentable over Robinson *et al.*, as applied to Claim 15, in view of Gobeli (U.S. Pat. 5,768,003).

Claims 16, 17, and 19 were objected to as being dependent upon a rejected base claim, but would be allowable if rewritten in independent form to include all the limitations of the base claim and any intervening claims.

Claim 16 has been amended to include all claim limitations of independent Claim 15. Claim 15 has been cancelled.

Thus, twice amended Claim 16 should be allowable over Robinson *et al.* because Robinson *et al.* do not teach, in combination with a first mirror underneath the electro-optic material and a second mirror above the electro-optic material, "a first layer of dielectric material underneath the electro-optic material and a second layer of dielectric material above the electro-optic material." Applicants note that Claim 16 as amended does not include all the limitations stated as the reason for the indication of allowable subject matter in Part 8 of the Office Action at hand. Specifically, amended Claim 16 does not include the limitations of Claim 19 ("a copper interconnect extending from each pixel mesa along a mesa sidewall to a circuit contact of a pixel circuit") since it is believed that this limitation is not needed to distinguish the claims over the prior art.

All claims previously depending from Claim 15 (Claims 2-11 and 18-19) have been amended to depend now from Claim 16.

No new matter is introduced.

CONCLUSION

In view of the above amendments and remarks, it is believed that all now-pending claims (Claims 2-14 and 16-19) are in condition for allowance, and it is respectfully requested that the application be passed to issue. If the Examiner feels that a telephone conference would expedite prosecution of this case, the Examiner is invited to call the undersigned at (978) 341-0036.

Respectfully submitted,

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MARKED UP VERSION OF AMENDMENTSClaim Amendments Under 37 C.F.R. § 1.121(c)(1)(ii)

2. (Twice Amended) The modulator of Claim [15] 16 wherein the solid state electro-optic material comprises a ceramic material.
3. (Twice Amended) The modulator of Claim [15] 16 wherein the solid state electro-optic material comprises PLZT.
4. (Twice Amended) The modulator of Claim [15] 16 wherein the pixel circuits comprise an array of transistors formed on a silicon substrate.
5. (Twice Amended) The modulator of Claim [15] 16 wherein the electro-optic material comprises a thin film layer having a thickness of 2000 nm or less.
6. (Twice Amended) The modulator of Claim [15] 16 wherein the electro-optic material comprises a plurality of layers.
7. (Twice Amended) The modulator of Claim [15] 16 wherein each electrode comprises an electrically conductive layer that contacts a dielectric layer.
8. (Twice Amended) The modulator of Claim [15] 16 wherein the semiconductor substrate comprises a CMOS integrated circuit.
9. (Twice Amended) The modulator of Claim [15] 16 further comprising a light source and an optical coupler.

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10. (Twice Amended) The modulator of Claim [15] 16 further comprising a memory circuit co-located with each pixel.
11. (Twice Amended) The modulator of Claim [15] 16 wherein each pixel circuit comprises a random access memory.
16. (Twice Amended) [The modulator of Claim 15 further comprising] A spatial light modulator comprising:
 - an array of pixels formed on a semiconductor substrate, each pixel including a solid state electro-optic material positioned between a first electrode and a second electrode;
 - a first layer of dielectric material underneath the electro-optic material and a second layer of dielectric material above the electro-optic material;
 - a first mirror underneath the electro-optic material and a second mirror above the electro-optic material forming a cavity; and
 - an array of pixel circuits formed with the semiconductor substrate, each pixel being connected to a pixel circuit.
18. (Twice Amended) The modulator of Claim [15] 16 wherein the first and second electrodes comprise an optically transmissive conductive material.
19. (Twice Amended) The modulator of Claim [15] 16 further comprising a copper interconnect extending from each pixel mesa along a mesa sidewall to a circuit contact of a pixel circuit.